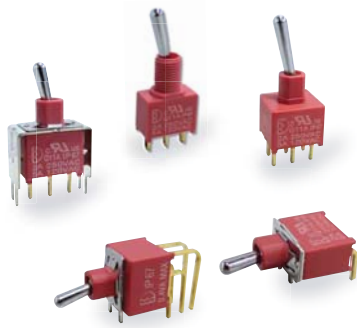


# 1A Series

Sealed Miniature Toggle Switches

1A  
Toggle Switches



IP 67  
ACCORDING TO  
EN 60529:1991+A1:2001  
IEC 60529:2001

C **UL** US  
E 187490

**RoHS**  
compliant

**Pb**  
lead-free

## SPECIFICATIONS

**CONTACT RATING:** Dependent upon contact material See page 17.

**MECHANICAL LIFE:** 30,000 make-and-break cycles.

**CONTACT RESISTANCE:** 10 mΩ max. initial @ 2-4VDC  
100mA for both silver and gold plated contacts.

**INSULATION RESISTANCE:** 1,000 MΩ min.

**DIELECTRIC STRENGTH:** 1,000 Vrms min. @sea level.

**OPERATING TEMPERATURE:** -40°C to 85°C.

## MATERIALS

**CASE & BUSHING:** Glass filled nylon 6/6, flame retardant, heat stabilized (UL94v-0).

**ACTUATOR:** Brass, chrome plated with internal, O-ring seal standard.

**SWITCH SUPPORT:** Brass or steel, tin plated.

**SWITCH SUPPORT RETAINER:** Stainless steel.

**CONTACT / TERMINALS:** Copper alloy, with Silver or gold plated.  
(See Page 17)

## HOW TO ORDER

MODEL NO.	ACTUATOR	BUSHING	TERMINATIONS	TERMINAL PLATING	SEAL	RoHS SOLDERING
<p>Model NO.</p> <p>1AS1 SP ON-NONE-ON</p> <p>1AS2 SP ON-NONE-(ON)</p> <p>1AS3 SP ON-OFF-ON</p> <p>1AS4 SP (ON)-OFF-(ON)</p> <p>1AS5 SP ON-OFF-(ON)</p> <p>1AD1 DP ON-NONE-ON</p> <p>1AD2 DP ON-NONE-(ON)</p> <p>1AD3 DP ON-OFF-ON</p> <p>1AD4 DP (ON)-OFF-(ON)</p> <p>1AD5 DP ON-OFF-(ON)</p> <p>1AD6 DP ON-ON-ON</p> <p>1AD7 DP (ON)-ON-(ON)</p> <p>1AD8 DP ON-ON-(ON)</p> <p>1A31 3P ON-NONE-ON</p> <p>1A32 3P ON-NONE-(ON)</p> <p>1A33 3P ON-OFF-ON</p> <p>1A34 3P (ON)-OFF-(ON)</p> <p>1A35 3P ON-OFF-(ON)</p>	<p>Actuator</p> <p>T1 12.70 high</p> <p>T2 7.62 high</p> <p>TA Plastic, black 12.70 high</p> <p>TB Plastic, black 7.62 high</p> <p>TC Plastic, silver 12.70 high</p>	<p>Bushing</p> <p>B1 8.89 high</p> <p>B4 6.10 high</p>	<p>Terminations</p> <p>M1 Solder Lug</p> <p>M2 PC thru-hole</p> <p>M51 18.70 high, wire wrap</p> <p>M52 24.20 high, wire wrap</p> <p>M53 10.55 high, wire wrap</p> <p>M54 26.97 high, wire wrap</p> <p>M6 Right angle, PC thru-hole</p> <p>M6N Right angle, snap-in, PC thru-hole</p> <p>M7 Vertical right angle, PC thru-hole</p> <p>VS2 11.68 high, V-bracket</p> <p>V2N 11.68 high, snap-in V-bracket</p> <p>VS3 16.00 high, V-bracket</p>	<p>Terminal plating</p> <p>Q Gold flash over silver</p> <p>R Gold</p> <p>C Gold over silver</p>	<p>Seal</p> <p>E EPOXY (std)</p>	<p>RoHS soldering</p> <p>S RoHS &amp; Lead Free</p>

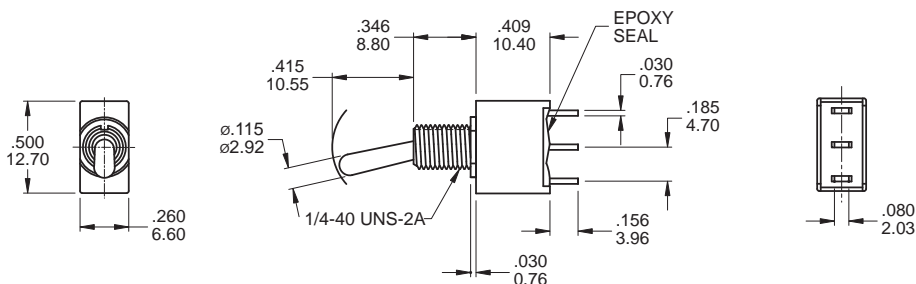
## SWITCH FUNCTION

NO. POLES	UL/CSA MODEL NO.	MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS / SCHEMATIC			
			POS.1	POS.2	POS.3	POS.1	POS.2	POS.3	
SP	Q11A11	1AS1	ON	NONE	ON		N/A		
	Q11A12	1AS2	ON	NONE	(ON)	2-3		2-1	
	Q11A13	1AS3	ON	OFF	ON		OPEN		
	Q11A14	1AS4	(ON)	OFF	(ON)				
	Q11A15	1AS5	ON	OFF	(ON)				
DP	Q11A21	1AD1	ON	NONE	ON		N/A		
	Q11A22	1AD2	ON	NONE	(ON)	2-3,5-6		2-1,5-4	
	Q11A23	1AD3	ON	OFF	ON		OPEN		
	Q11A24	1AD4	(ON)	OFF	(ON)				
	Q11A25	1AD5	ON	OFF	(ON)				
	▲	Q11A27	1AD7	(ON)	ON	(ON)	2-3,5-6	2-3,5-4	2-1,5-4
	▲	Q11A28	1AD8	ON	ON	(ON)			
	3P	Q11A31	1A31	ON	NONE	ON		N/A	
Q11A32		1A32	ON	NONE	(ON)	2-3,5-6,8-9		2-1,5-4,8-7	
Q11A33		1A33	ON	OFF	ON		OPEN		
Q11A34		1A34	(ON)	OFF	(ON)				
Q11A35		1A35	ON	OFF	(ON)				

( ) = MOMENTARY

▲ Please check the availability in advance before order

## POLE OPTIONS



SPDT

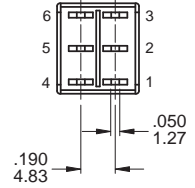
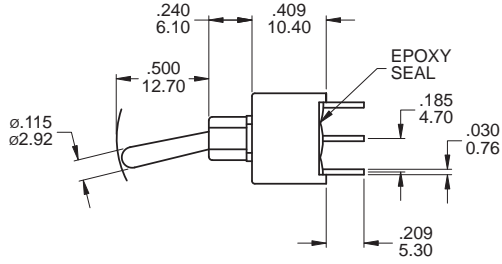
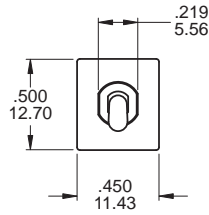
Part No. Shown : 1AS1T1B1M1QES



# 1A Series

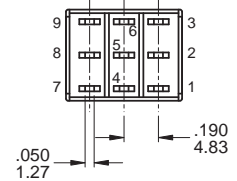
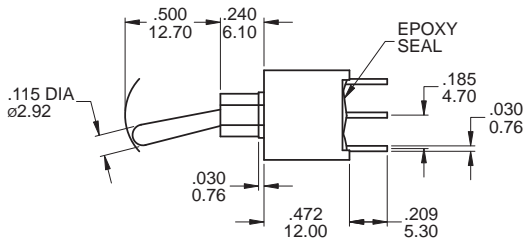
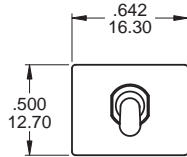
Sealed Miniature Toggle Switches

1A  
Toggle Switches



DPDT

Part No. Shown : 1AD1T1B4M2QES



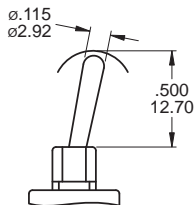
3PDT

Part No. Shown : 1A31T1B4M2QES

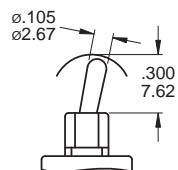
## ACTUATOR OPTIONS

Actuator shown with standard B4 Bushing,  
Subtract .085 (2.15) for B1 bushing.

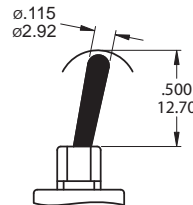
T1



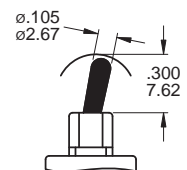
T2



TA



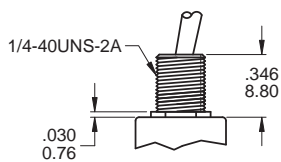
TB



PLASTIC ACTUATOR  
(TC, Silver)

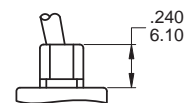
## BUSHING OPTIONS

B1



Std for M1

B4

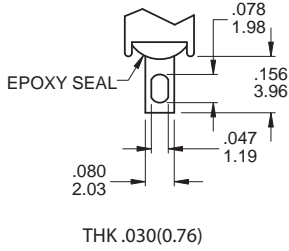


Std for M2, M6, M7, VS termination

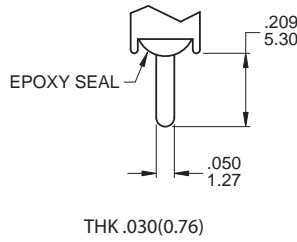


### TERMINATION OPTIONS

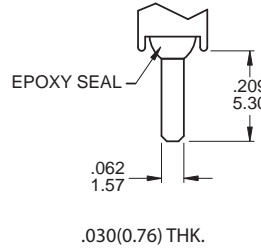
#### M1 Solder lug



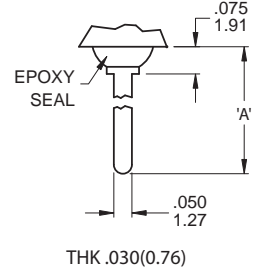
#### M2 PC Thru-hole



#### M3 Quick connect



#### M5 Wire Wrap



### OTHER TERMINATION OPTIONS

**M6** Right angle P.C. Mount

**M7** Vertical right angle P.C. Mount

**VS2** Vertical bracket P.C. Mount

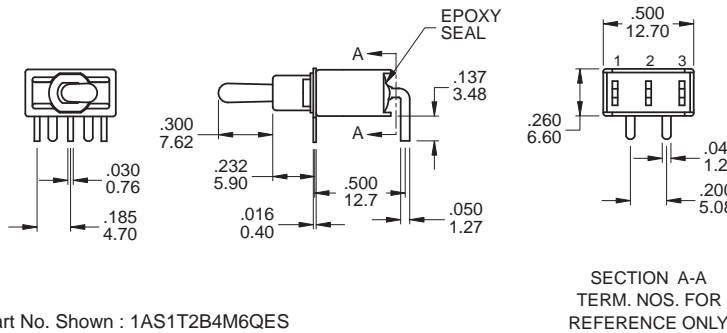
**VS3** Vertical bracket P.C. Mount

**M6N** Right angle P.C. Mount  
with snap-in bracket

**V2N** Vertical bracket P.C. Mount  
with snap-in bracket

OPTION CODE	DIM. 'A'
M51	.736 ( 18.70 )
M52	.953 ( 24.20 )
M53	.415 ( 10.55 )
M54	1.062 ( 26.97 )

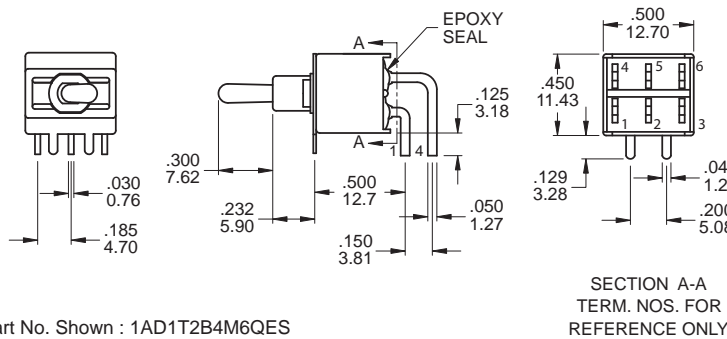
#### M6



Part No. Shown : 1AS1T2B4M6QES

#### SPDT

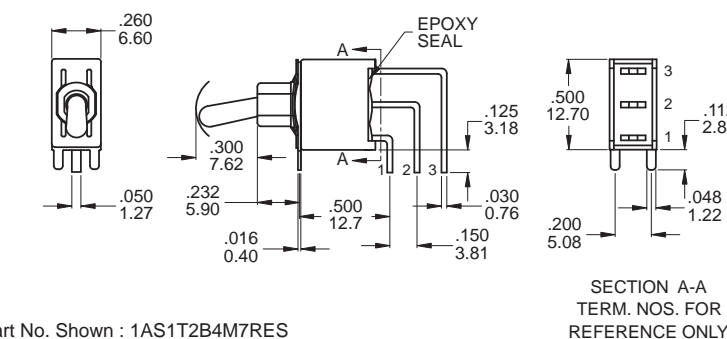
#### M6



Part No. Shown : 1AD1T2B4M6QES

#### DPDT

#### M7



Part No. Shown : 1AS1T2B4M7RES

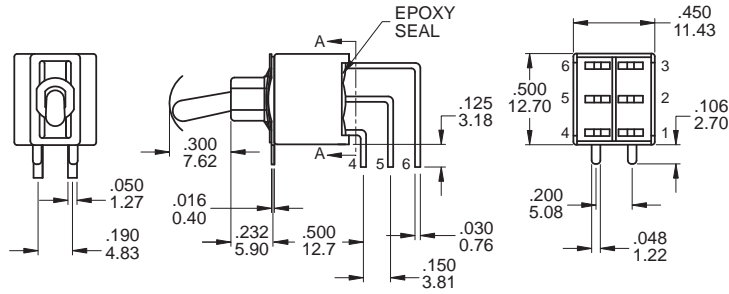
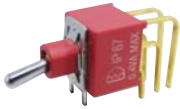
#### SPDT

# 1A Series

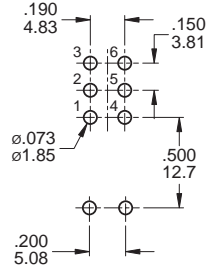
Sealed Miniature Toggle Switches

1A  
Toggle Switches

M7



P.C. MOUNTING

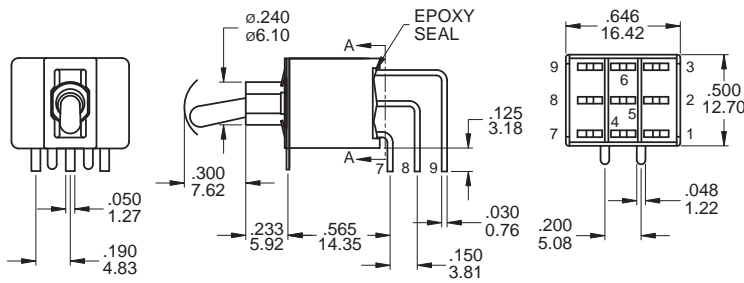


SECTION A-A  
TERM. NOS. FOR  
REFERENCE ONLY

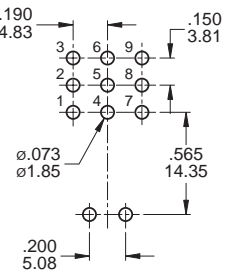
DPDT

Part No. Shown : 1AD1T2B4M7RES

M7



P.C. MOUNTING

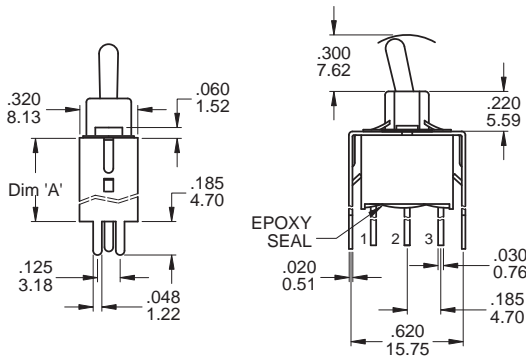


SECTION A-A  
TERM. NOS. FOR  
REFERENCE ONLY

3PDT

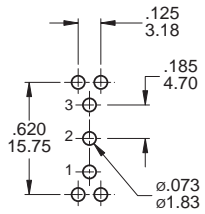
Part No. Shown : 1A31T2B4M7QES

VS2 - VS3



OPTION CODE	DIM. 'A'
VS2	.460 11.68
VS3	.630 16.00

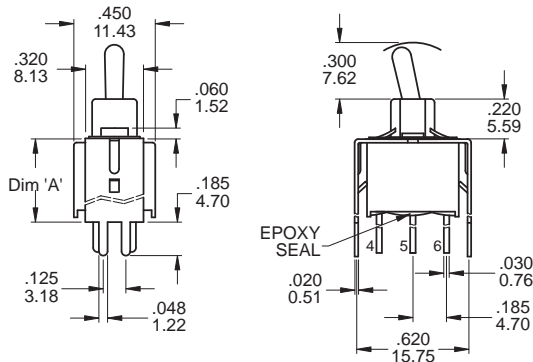
P.C. MOUNTING



SPDT

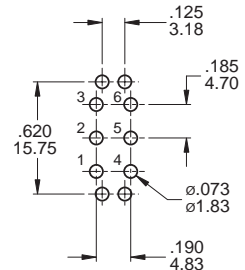
Part No. Shown : 1AS1T2B4VS2QES

VS2 - VS3



OPTION CODE	DIM. 'A'
VS2	.460 11.68
VS3	.630 16.00

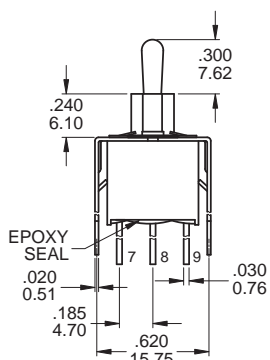
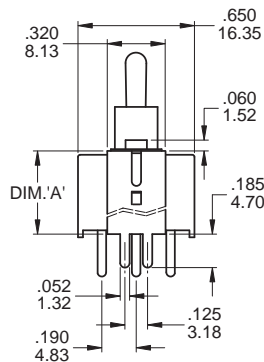
P.C. MOUNTING



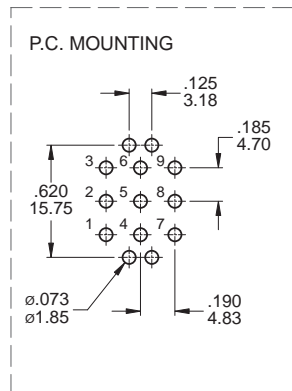
DPDT

Part No. Shown : 1AD1T2B4VS2QES

VS2 - VS3



OPTION CODE	DIM. 'A'
VS2	.460 11.68
VS3	.630 16.00

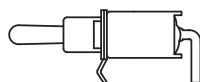


3PDT

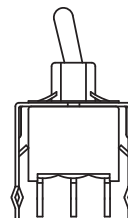
Part No. Shown : 1A31T2B4VS2QES

### SNAP-IN TERMINATION OPTIONS

M6N

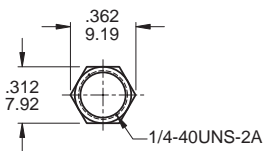


V2N

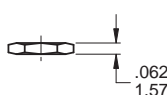


### HARDWARE

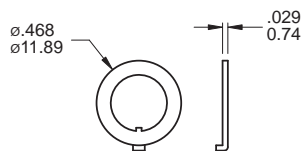
1/4 NUT



MNU-1M01A



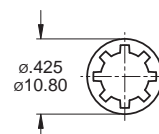
LOCKING RING



MNU-1M02



LOCKWASHER



MNU-1M03

.018 THK  
0.46

### CONTACT MATERIAL OPTIONS

	CONTACT PLATING	TERMINAL PLATING	RATINGS
Q	Silver	Gold flash over silver	5 Amps with resistant load @ 120VAC or 28VDC 2 Amps with resistant load @ 250VAC
C	Gold over Silver	Gold over silver	
R	Gold	Gold	0.4 Volt - Amps ( VA ) max. @ 20V max. ( AC or DC )

### SOLDERING PROCESSES

MANUAL SOLDERING: Use soldering iron of 30 watts, controlled at 350°C approximately 5 seconds while applying solder.

WAVE SOLDERING: Recommended Soldering Temperature: 270 ± 5°C

Duration of Solder Immersion: Max 5 sec. (PCB is 1.6mm in thickness)

